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(71)Applicant : TOSHIBA CORP

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(72)Inventor : SAKAMOTO TOSHIYA  
KAWASHIMA FUMIYUKI  
SAWA TAKAO  
NAKAGAWA KATSUTOSHI  
TSUDAI AKIHIKO  
SAHASHI MASASHI

### (54) PERMANENT MAGNET AND MATERIAL THEREOF

#### (57)Abstract:

PROBLEM TO BE SOLVED: To acquire a high maximum product with high saturation magnetization and to improve temperature characteristics of a coercive force, by allowing a main hard magnetic phase represented by a specific formula to be ThMn<sub>12</sub> type crystal structure.

SOLUTION: The permanent magnet material is represented by a formula (R is one element selected among rare earth elements comprising Y, M is one element selected among Ti and Nb, T is one element selected among Ni, Cu, Sn, V, Ta, Cr, Mo, W, and Mn, A is one element selected among Si, Ge, Al, and Ga, while  $1 \leq u \leq 0.7$ ,  $0 \leq v \leq 0.8$ ,  $0 \leq w \leq 0.1$ ,  $5 \leq x \leq 12$ ,  $0.1 \leq y \leq 1.5$  related to u, v, w, x, and y), and main hard magnetic phase is ThMn<sub>12</sub> type crystal structure. The permanent magnet is improved in saturation magnetization and coercive force, with temperature characteristics of the coercive force improved.

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